

REMARKS

The Official Action mailed March 24, 2008, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on February 25, 2005; August 4, 2005; February 3, 2006; July 28, 2006; April 19, 2007 and October 19, 2007.

Claims 25-212 were pending in the present application prior to the above amendment. Claims 57-61, 63-70, 72-79, 81-88, 90-97, 99-106, 108-115, 117-124, 126-133, 135-142, 144-151, 153-160, 162-169, 171-178, 180-187, 189-196 and 198-200 have been withdrawn from consideration by the Examiner. **Please note:** Although Box 4a includes claim 125 in the list of withdrawn claims, claim 125 is included in the list of rejected claims, and appears to be rejected in the Official Action. Therefore, claim 125 is pending and not withdrawn. Claims 35, 36, 49-52, 102-110, 165-182, 202, 204, 206-208 and 212 have been canceled without prejudice or disclaimer; and claims 27 and 45 have been amended to better recite the features of the present invention. Accordingly, claims 25-34, 37-48, 53-56, 62, 71, 80, 89, 98, 116, 125, 134, 143, 152, 161, 188, 197, 201, 203, 205 and 209-211 are currently elected, of which claims 25, 27, 29, 31, 33, 37, 39, 41, 43, 45, 47, 53 and 55 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 2 of the Official Action rejects claims 25, 26, 29, 30, 33, 34, 41, 42, 45, 46, 49, 50-52, 62, 80, 98, 152, 170, 179, 209 and 211 as obvious based on the combination of U.S. Patent No. 6,414,280 to Nishitani; U.S. Patent No. 6,060,697 to Morita and U.S. Patent No. 5,006,695 to Elliott. Paragraph 3 of the Official Action rejects claims 27, 28, 31, 32, 35-40, 43, 44, 47, 48, 53-56, 71, 89, 107, 116, 125, 134, 143, 161, 188, 197, 201-208, 210 and 212 as obvious based on the combination of

Nishitani, Morita, Elliott, U.S. Patent No. 6,461,439 to Granneman and U.S. Patent No. 6,399,921 to Johnsgard. Regarding independent claims 25, 27, 29, 31, 33, 37, 39, 41, 43, 45, 47, 53 and 55, the Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application. Regarding independent claims 35, 49 and 51, the claims have been canceled without prejudice or disclaimer; therefore, the rejections of claims 35, 49 and 51 are now moot.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claims 25, 27, 29, 31, 33, 37, 39, 41, 43, 45, 47, 53 and 55 recite a plurality of light pulses. For the reasons provided below, Nishitani, Morita, Elliott, Granneman and Johnsgard, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

In the *Response* filed December 13, 2007, the Applicant noted in detail that Elliott fails to teach or suggest a method of manufacturing a semiconductor device, the method comprising heating a substrate with a plurality of light pulses, where each light pulse has a cycle of one second or longer, and is formed by switching on and off a lamp light source (see pages 3-5). In response, the Official Action asserts that Elliott clearly shows a plurality of pulse forms that is applied to the heating mantle/element via a relay. The Applicant respectfully disagrees and traverses the assertions in the Official Action.

Elliott fails to teach or suggest a plurality of light pulses. Elliott may teach an apparatus for controlling a heating element for heating a substance, and may teach a pulse-like waveform 116 in Figure 4. However, the waveform 116 is an output of a solid state relay 56, which is not a plurality of light pulses.

As conceded in the Official Action, Nishitani and Morita fail to teach or suggest a plurality of light pulses (see page 3, *Response* filed December 13, 2007).

Accordingly, Nishitani, Morita and Elliott, either alone or in combination, do not teach or suggest a plurality of light pulses. Also, the Applicant respectfully submits that Nishitani, Morita and Elliott do not teach or suggest that each light pulse has a cycle of one second or longer.

Further, Johnsgard and Granneman do not cure deficiencies in Nishitani, Morita and Elliott.

Therefore, the Applicant respectfully submits that Nishitani, Morita, Elliott, Granneman and Johnsgard, either alone or in combination, do not teach or suggest a plurality of light pulses.

Since Nishitani, Morita, Elliott, Granneman and Johnsgard do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Nishitani, Morita, Elliott, Granneman and Johnsgard or to combine reference

teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references "could have been" combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art" (emphasis in original). KSR International Co. v. Teleflex Inc., 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007). Thus, it is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

The waveform 116 in Elliott is an output of a solid state relay 56, which seems to be an electronic signal as described by 120 VAC. The Official Action does not set forth a sufficient explanation as to why one of ordinary skill in the art at the time of the present invention would have had a reason to replace the waveform 116 with a plurality of light pulses. The teachings of Nishitani, Morita, Granneman and Johnsgard do not cure the above-referenced deficiencies in Elliott.

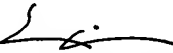
Therefore, the Applicant respectfully submits that the Official Action has not provided a proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Nishitani, Morita, Elliott, Granneman and Johnsgard or to combine reference teachings to achieve the claimed invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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